BRIEF REPORT

Tobacco availability and point of sale marketing in demographically contrasting districts of Massachusetts

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Objective: To assess the prevalence and characteristics of tobacco sales and point-of-sale promotions and advertising in predominantly Latino business districts, and in comparison districts; and the economic importance of tobacco sales and marketing to Latino owned small businesses.
Design: Observational surveys of retail establishments and interviews with store managers.
Setting: Demographically contrasting business districts of eastern Massachusetts.
Main outcome measures: Percentage of businesses selling tobacco, numbers and characteristics of exterior and interior tobacco advertisements per store, merchant reports of promotional allowances received from tobacco distributors.
Results: The proportion of businesses selling tobacco, and hence having storefront tobacco advertising, is strongly negatively correlated with per capita income in the census tracts where businesses are located (Spearman's $\rho = -0.794$, $p = 0.006$). Mentholated brands are marketed disproportionately in low income, urban communities. Latino merchants are highly dependent on tobacco sales, but would require relatively modest compensation to forego tobacco promotional allowances.
Conclusions: Storefront tobacco advertising is far more prevalent in predominantly minority, low income communities than in non-minority, higher income communities, principally because of the differing mix of kinds of businesses in the two types of communities, and the greater prevalence of tobacco vendors in lower income neighbourhoods. Tobacco companies obtain this advertising at little cost.

Since the voluntary agreement to end broadcast advertising of tobacco in the USA in 1971, tobacco companies have emphasised "promotions" in their marketing budgets.[1] In 1997, reported industry compensation to merchants for product placement and advertising was $2.88 billion, 42.8% of all advertising and promotional expenditures.[2] In the mid 1990s, 62.5% of small retail stores in Santa Clara County, California were found to receive promotional allowances for tobacco.[3]

Although Latinos in the USA have comparatively low smoking prevalence[4–6] many public health specialists are concerned about target marketing of tobacco products to Latinos and other minorities.[7–9] The ethnic business enclave refers to the network of small businesses owned and/or managed by members of an immigrant community,[10] whose principal markets typically are members of that community.[11 12] It can be hypothesised that tobacco sales and promotional allowances are important to many small businesses in typical immigrant enclaves. A study in San Diego, California, found that stores in minority neighbourhoods were more "supportive" of tobacco use through point-of-sale advertising.[13]

Comparable published studies have not been done elsewhere in the USA. One study found that outdoor tobacco advertising (not necessarily storefront advertising) was "more intense" in neighbourhoods of low socioeconomic status (which correlates strongly with the percentage of minority residents).[14] A survey using volunteer data collectors in 124 Massachusetts municipalities found that communities with high poverty rates had a higher average number of storefront ads per tobacco vendor, and that mentholated brands were advertised more heavily in predominantly minority communities.[15]

OBJECTIVES AND METHODS

This study assessed the types and percentage of retail businesses in demographically and economically diverse business districts in the Boston area that sell tobacco products; the amount and characteristics of tobacco point-of-sale advertising in those districts; and any evidence of target marketing to specific ethnic groups.

Businesses open to the public were observed to enumerate their tobacco sales and point-of-sale advertising. The study was carried out within two Latino enclaves and a predominantly African American area, and in predominantly white, non-Hispanic urban and suburban areas of greater affluence. In addition, owners and managers of businesses selling tobacco in Latino business enclaves were interviewed.

Because our original objective was to learn about tobacco in the Latino enclave economy, we first selected the largest Latino enclave in Boston, in the Jamaica Plain neighbourhood; and the north side of Lawrence, Massachusetts, the largest predominantly Latino community in Massachusetts. We identified census tracts of similar economic status but differing ethnic composition, then selected at random a predominantly African American district in North Dorchester. For contrast, we purposefully selected Newbury Street in Boston's Back Bay, an affluent neighbourhood with shops and nightlife that attract visitors.

Because the Latino enclave in North Lawrence is very large, four census tracts with Latino population greater than 50% were selected at random, plus two comparison tracts selected at random from predominantly white non-Hispanic South Lawrence.

We conducted a second round of observations in the summer of 1999, in most areas covered in year 1 (carried out in the summer of 1998), and in additional commercial districts in five comparatively affluent, predominantly white, non-Hispanic exurban and suburban communities, chosen purposefully. We did not repeat observations in part of South Lawrence, because of hostility from proprietors in that area, nor in Newbury Street as less than 4% of establishments there sold tobacco and most had no exterior advertisements. In neighbourhoods observed twice, three shops selling tobacco closed and two new ones were established, and a restaurant in North Lawrence removed a vending machine; otherwise the total number of establishments and the number selling

Table 1 Establishments by neighbourhood

Neighbourhood	Per capita income 1989	Total number of establishments*	Number selling tobacco products* (% of all establishments)*	Number of convenience stores/bodegas in neighbourhood (% of all establishments)	Number convenience stores/bodegas selling tobacco (% of all tobacco vendors)*	Percentage of all ads that are for mentholated brands* (%)
Jamaica Plain	$9595	93	17 (18.3%)	16 (17.2%)	15 (88.2%)	14.8
North Dorchester	$9267	43	12 (27.9%)	13 (30.2%)	9 (75%)	32.3
North Lawrence	$7620	124	24 (19.4%)	21 (16.9%)	17 (70.8%)	18.1
South Lawrence	$13937	80	14 (17.5%)	11 (13.8%)	7 (50%)	18.0
Newbury Street	$46490	406	15 (3.7%)	6 (1.8%)	6 (40%)	9.0
Brookline Village	$23234	183	10 (5.5%)	4 (2.2%)	4 (40%)	10.7
Coolidge Corner	$24866	235	11 (4.7%)	6 (2.6%)	4 (36%)	3.4
Newton Center	$28025	164	7 (4.9%)	1 (0.6%)	1 (14.3%)	0
Central Square	$24963	126	11 (8.7%)	6 (4.8%)	5 (45%)	11
Andover	$21039	222	7 (3.2%%)	2 (0.9%)	2 (28.6%)	3.2
Total	Mean $20903	1676	128 (7.6%)	86 (5.1%)	70 (54.7%)	13

*Year 1 for Newbury Street and South Lawrence, year 2 for all others.

tobacco products remained the same over the two years. In addition, 94% of establishments were consistent in the presence or absence of exterior advertising from year to year ($\chi^2 = 97$, $p < 0.0005$) and the number of changes in each direction was equal (four each). Consequently, in the results section we report year 2 observations combined with data from those neighbourhoods observed only in year 1, in order to achieve the largest possible sample of neighbourhoods.

We used field tested forms to record information about the establishment, exterior and interior advertisements and promotional displays, including location, language, ethnicity of model, if any, and brand of tobacco product, plus other information not reported here.

We developed a merchant interview in English, which was translated into Spanish, and translated back by a different individual. Discrepancies were resolved, and the questionnaire was field tested. We endeavoured to interview proprietors or managers of all establishments selling tobacco in the Jamaica Plain district and a random sample of those in the North Lawrence district in 1999.

Data collectors underwent classroom training, practice observations and interviews, and validation of the various kinds of observations. Only observers who demonstrated high reliability continued on the study. Observers carried maps showing the territory they were to cover.

All private businesses open to the public were observed and included in the database, including retail stores and services such as physicians' offices, dentists, and travel agencies. All restaurants, bars, department stores, pharmacies, liquor stores, grocery stores, and convenience stores or bodegas (small grocery and variety stores) were entered to determine whether tobacco was sold and to record any interior advertising. Businesses not expected to sell tobacco products, such as clothing stores, were noted. When in doubt, to confirm the absence of tobacco sales, observers entered the premises.

Analyses were conducted using SPSS. Files were structured with the individual advertisement, the establishment or the neighbourhood as the unit of analysis. Information about per capita income for the corresponding tracts from the 1990 census was added to the neighbourhood level file.

RESULTS

Per capita income of neighbourhoods ranged from $7620/year (North Lawrence) to $46 490 (Newbury Street). The other predominantly minority districts (Jamaica Plain and North Dorchester) had per capita income under $10 000. The suburban districts had per capita income ranging from $21 039 to $28 025. South Lawrence was intermediate at $13 937.

The number of storefronts in each business district, and the density of store spaces, are elements of the built environment that depend considerably on historical accident. However, the nature of businesses occupying the available spaces responds to economic forces. We found that the proportion of businesses in a district selling tobacco products was negatively associated with per capita income (table 1).

The correlation between per capita income in a district, and the percentage of establishments selling tobacco in year 2, plus the year 1 observations in Newbury Street and South Lawrence, by Spearman's ρ, was –0.794 ($p = 0.006$). The correlations for year 1 and year 2 observations taken separately were also significant ($\rho = -0.9$, $p = 0.037$, and $\rho = -0.7$, $p = 0.036$, respectively).

Businesses that commonly sold tobacco were convenience stores/bodegas, gas stations, pharmacies, and liquor stores. The convenience store/bodega was the most frequent source of tobacco products, particularly in the minority neighbourhoods. In Jamaica Plain, 88% of establishments that sold tobacco were this type of business; in North Lawrence, 71%, and in North Dorchester, 75%. Convenience stores were 50% or less of stores selling tobacco in the remaining neighbourhoods. Convenience stores/bodegas also constituted a higher percentage of all business in the minority communities than in the more affluent areas (table 1).

Combining the year 2 observations with year 1 observations in Newbury Street and South Lawrence, three (1.8%) of the 161 interior ads with a human image featured an evidently Latino model. There were no evidently Latino models in exterior advertisements. There were seven African American models in exterior ads (5.8% of ads with models) and 16 in interior ads (10.0%), scattered among neighbourhoods.

Advertisements for mentholated brands were heavily concentrated in Jamaica Plain, North and South Lawrence, and particularly North Dorchester (where 32.3% of all ads, both interior and exterior, were for mentholated brands). Overall, in the predominantly minority neighbourhoods, 29% of advertisements were for these mentholated brands versus 10% in the non-minority neighbourhoods ($\chi^2 = 67.2$, $p < 0.0005$).

Brookline Village had the highest number of exterior advertisements per store selling tobacco, 7.7. This was explained by just two establishments, with 20 and 22 exterior ads respectively. The minority neighbourhoods otherwise tended to have more exterior ads per store selling tobacco than the non-minority neighbourhoods (5.51 *v* 4.41). For year 2 alone, this difference was significant by *t* test, but not by non-parametric tests. However, including the year 1 data from Newbury Street and South Lawrence, despite the Brookline Village anomaly, the minority neighbourhoods tended to have more exterior ads per store selling tobacco ($U = 1773.5$, $p = 0.017$). In every comparison, in contrast, the non-minority neighbourhoods tended to have more interior ads per

What this paper adds

Since the voluntary agreement to end broadcast advertising of tobacco in the USA in 1971, tobacco companies have relied increasingly on point-of-sale advertising and promotions. A study in San Diego, California found that Latino and African American neighbourhoods had a disproportionately high prevalence of tobacco advertising. These results had not been replicated or extended, nor did the previous study suggest an explanation for the findings. This study finds that in the Boston, Massachusetts area, the prevalence of point-of-sale tobacco advertising in neighbourhood retail districts is inversely related to per capita income, which in turn is related to the mix of types of retail businesses found in each neighbourhood. Specifically, small grocery and variety stores are a much higher percentage of businesses in lower income neighbourhoods. They are very likely to carry tobacco products, and to have large amounts of exterior tobacco advertising. The lower income neighbourhoods in the sample are predominantly African American or Latino in resident population. Also, mentholated brands are advertised disproportionately in the low income, minority neighbourhoods, suggesting possible target marketing of these brands to lower income or minority groups through point-of-sale advertising.

store that sold tobacco, although this difference for the combined years only approached significance. Because a higher percentage of stores in the minority neighbourhoods sell tobacco, the number of advertisements divided by the total number of business establishments was much higher in the minority and low income neighbourhoods. Exterior advertisements per store, including establishments that did not sell tobacco, were 0.95 in minority neighbourhoods in the combined data set versus 0.15 in the non-minority neighbourhoods ($U = 155973.5$, $p < 0.0005$).

Interviews were successfully carried out in 72.2% ($n = 13$) of all stores selling tobacco in Jamaica Plain and with all of the random sample of 12 establishments in North Lawrence (100% response). Twenty interviews were conducted in Spanish, and 23 of 25 respondents were Latino, principally Dominican.

Excluding one who answered "one million dollars", Latino respondents said they would require an average of $31 678/year to give up tobacco sales. Many respondents said they did not know, or refused to answer, questions about required compensation to give up tobacco promotional allowances. Mean required compensation to give up tobacco advertising was $1280 for Latino managed businesses ($n = 10$); mean compensation to give up slotting allowances and product discounts was $1354 ($n = 7$). One merchant reported receiving money in exchange for tobacco advertising, but otherwise promotional allowances were in the form of product discounts and free merchandise.

DISCUSSION

Storefront advertising of tobacco products is more prevalent in low income communities than in more affluent neighbourhoods, as a higher proportion of businesses in the low income communities sell tobacco products. The tendency for stores in non-minority neighbourhoods to have more interior tobacco advertising may be explained in part simply by their typically larger size.

Mentholated brands were marketed most heavily in the predominantly African American neighbourhood, and disproportionately in the Latino neighbourhoods. Although we observed relatively few Spanish language ads or ads featuring evidently Latino models, Latino grocery and variety store owners are heavily dependent on tobacco sales.

It costs tobacco distributors little to obtain a high prevalence of tobacco advertising in the Latino neighbourhoods. In exchange for about $2600 annually in product discounts and branded premiums or store supplies, the companies fill store windows with their advertising.

A limitation of this study is its confinement to the Boston metropolitan area. That similar patterns exist elsewhere in the USA seems plausible, but is unconfirmed. The sample of neighbourhoods is small, so the findings should be viewed with caution. Future research may establish the generalisability of these findings to other regions.

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